METHOD 1010A

PENSKY-MARTENS CLOSED-CUP METHOD FOR DETERMINING IGNITABILITY

1.0 SCOPE AND APPLICATION

1.1 Method 1010 uses the Pensky-Martens closed-cup tester to determine the flash point of liquids including those that tend to form a surface film under test conditions. Liquids containing non-filterable, suspended solids can also be tested using this method.

1.2 This method is one of two method options required by 40 CFR 261.21(a)(1) in the determination of the hazardous waste ignitability characteristic. Method 1020 is the other method option.

2.0 SUMMARY OF METHOD

2.1 The sample is heated at a slow, constant rate with continual stirring. A small flame is directed into the cup at regular intervals with simultaneous interruption of stirring. The flash point is the lowest temperature at which application of the test flame ignites the vapor above the sample.

2.2 For complete instructions on how to conduct a test by this method, see Reference 4 below, "D 93-99c, Standard Test Methods for Flash-Point by Pensky-Martens Closed Cup Tester."

3.0 METHOD PERFORMANCE

3.1 The Pensky-Martens and Setaflash Closed Testers (Revision 0 of Method 1020) were evaluated using five industrial waste mixtures and p-xylene. The results of these studies are shown below in °F along with other data. The sample footnote numbers refer to the source documents identified under Sec. 4.0 of this method.

Sample	Pensky-Martens (°F)	Setaflash (°F)
1[2]	143.7 ± 1.5	139.3 ± 2.1
2[2]	144.7 ± 4.5	129.7 ± 0.6
3[2]	93.7 ± 1.5	97.7 ± 1.2
4[2]	198.0 ± 4.0	185.3 ± 0.6
5[2]	119.3 ± 3.1	122.7 ± 2.5
p-xylene[2]	81.3 ± 1.1	79.3 ± 0.6
p-xylene[3]	77.7 ± 0.5[a]	--
Tanker oil	125, 135	--
Tanker oil	180, 180	–
Tanker oil	110, 110	–
DIBK/xylene	102 ± 4[b]	107

[a]12 determinations over five-day period. [b]75/25 v/v analyzed by four laboratories.

4.0 REFERENCES

1. D 93-80, Test Methods for Flash Point by Pensky-Martens Closed Tester, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103, 04.09, 1986.

2. Umana, M., Gutknecht, W., Salmons, C., et al., Evaluation of Ignitability Methods (Liquids), EPA/600/S4-85/053, 1985.

3. Gaskill, A., Compilation and Evaluation of RCRA Method Performance Data, Work Assignment No. 2, EPA Contract No. 68-01-7075, September 1986.

4. D 93-99c, Standard Test Methods for Flash-Point by Pensky-Martens Closed Cup Tester, originally published by the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428. Available from Global Engineering Documents, 15 Iverness Way East, Englewood, CO 80112, 1-800-854-7179, http://global.ihs.com